

REMARKS

Claims 1-25 were pending in this application. Claims 1, 3, 4, 5, 13, 15 and 23 have been amended as indicated hereinabove. Claims 2 and 14 have been canceled. The drawings and specification have been amended without introducing any new matter. Claims 1, 3-13, and 15-25 remain pending in this application, stand rejected, and are at issue herein. Reconsideration of this application and indication of the allowability thereof in view of the foregoing amendments and following remarks are respectfully solicited.

The applicant wishes to thank the Examiner for noting that the application claims subject matter disclosed in prior application serial number 60/120,586, filed February 18, 1999. Indeed, this application is a 371 of International Application No. PCT/US00/04152. The applicant has amended the specification by inserting a new first paragraph specifying the claim for priority to this International Patent Application and to its priority Application. No new matter has been added by this amendment.

The Examiner has objected to the drawings under 37 CFR 1.84(p) because figures 1-9 contain numbers, letters, and reference characters smaller than 0.32 cm (1/8 inch) in height. Additionally, the Examiner objected to the drawing as failing to comply with 37 CFR 1.84(p)(5) because they do not include several reference signs mentioned in the specification. The applicant has submitted herewith corrected formal drawings for the Examiner's consideration. Reconsideration of these grounds of objection and indication of the acceptability of these drawings as amended are respectfully solicited.

The Examiner has objected to the specification because of a spelling error and the indication of wrong reference numbers on two occasions. The applicant has amended the specification to correct these informalities without the addition of new matter. Reconsideration of this objection to the specification in view of the amendment thereto are therefore respectfully solicited.

The Examiner has rejected claims 1-11 and 13-25 under 35 U.S.C. §102(e) as being anticipated by Pecore (U.S. Patent #6,014,325). The applicant has thoroughly considered Pecore '325, the language of the claims being rejected, and the Examiner's rationale for application of this reference against these claims. However, as will be discussed more fully below, the applicant must respectfully traverse this ground of rejection. Reconsideration of this ground of rejection in view of the foregoing amendments and following remarks and indication of the allowability of claims 1, 2-11, 13, and 15-25 are respectfully solicited.

In rejecting independent claim 1 and those claims dependent thereon the Examiner points to figure 4 of Pecore '325 as illustrating "a regulated DC output inverted with respect to the first polarity ...". While the Examiner is correct that the circuit of Fig. 4 of Pecore '325 does indeed show a second dc output that is inverted with respect to the first polarity of the first dc output, independent claim 1 is directed to a dual output transformerless power supply that, in accordance with the title of the application, provides either dual positive or dual negative supplies. Specifically, independent claim 1 as originally filed requires, *inter alia*, "a regulated dc output inverted to said first polarity." As originally worded, this language requires that second dc output stage has a regulated dc output that is inverted "to" the first polarity, not inverted "from" the first polarity. In other words, the language as originally filed required that the polarity of the first and the second dc output stages were the same, not different.

This being said, the applicant recognizes that the phrase "inverted to" might be confused to mean "inverted with respect to" as stated by the Examiner in formulating this rejection. As such, the applicant has amended the wording of independent claim 1 to clarify that the regulated dc output of the second dc output stage is inverted "to be" the first polarity, not inverted with respect to the first polarity. With this clarified wording, the applicant respectfully submits that the application of Fig. 4 of Pecore '325 is no longer applicable since Fig. 4 requires the outputs of the transformerless power supply be of different polarities.

While Fig. 4 of Pecore '325 shows opposite polarity outputs, the applicant recognizes that Fig. 2 of Pecore '325 shows two regulated DC outputs of the same polarity. However,

neither this circuit nor any teaching of Pecore '325 includes or describes the use of an inverter connected to the second wave rectifier as required by this independent claim 1, as amended. While the Examiner correctly points out that Pecore '325 does include a transistor, citing to column 7, line 51- column 8, line 23, the applicant respectfully submits that this transistor is coupled to the transformerless power supply of Pecore '325 to operate as a power switch, not as an inverter. Specifically, column 7, line 51 makes clear that the transistor is part of "a switching circuit 107...to short together terminals 116 and 113 of the 24 VDC stage in a response to a control signal CS applied at terminal 115. By shorting these load terminals together, capacitor 132 cannot build up a potential sufficient to cause current to flow through zener diodes 134 and 136.... This reduces the voltage across terminals 116 and 113 to magnitude equal to the collector-emitter saturation voltage of transistor 142, or about 0.1 volts."

As is made clear in this quoted section, the transistor to which the Examiner points does not operate as an inverter, but instead operates to shutoff or reduce the output voltage to 0.1 volts. This 0.1 volts is the same polarity as the output voltage across these terminals when the transistor is not turned on. "The 24 VDC supply 116 can be restored at any time by removing control signal CS from transistor 142." Pecore '325, column 8, lines 4-6. Instead of providing an inverter operation, the inclusion of this switching circuit is "to reduce power consumption to near zero." *Id.* at lines 15-16, 19-20.

Since the transistor of Pecore '325 serves a switching function to reduce the power consumption to near zero by nearly switching off the output of the DC output stage to which it is connected, and performs no inverting operation whatsoever, the applicant respectfully submits that independent claim 1 and those claims dependant thereon, to wit claims 3-12, are not anticipated by Pecore '325. Reconsideration of this ground of rejection and indication of the allowability of claims 1 and 3-12 at an early date are therefore respectfully solicited.

Independent claim 13, as amended, requires means for inverting said second DC output signal to be said first polarity. As discussed above, Pecore '325 does not include any means for inverting the DC output signal to be the same polarity as the output signal from the

other DC output signal. Instead, Pecore '325 includes a switching circuit that may be utilized to reduce the power consumption of the circuit to near zero. This is done by connecting a transistor across the output terminals of at least one of stages of the power supply. When the transistor is turned on, the two output terminals of that stage of the power supply are shorted together through the transistor. This reduces the output voltage to the collector emitter saturation voltage of the transistor, or about 0.1 volts. See Pecore '325, column 7, lines 51-62. However, it is noted that shorting these output terminals does not invert the polarity of the DC output signal, but instead reduces the voltage to approximately 0.1 volt. While this voltage is small, it is also the same polarity as the original output DC signal from that stage of the power supply.

In view of the above, the applicant respectfully submits that the claim 13 and those claims dependent thereon, to wit claims 16-21, are not anticipated by Pecore '325. Reconsideration of this ground of rejection and indication of the allowability of these claims at an early date are respectfully solicited.

Claim 15 requires, *inter alia*, "means for shifting said AC input 180 degrees for input in due said second means for rectifying." However, as discussed above, Pecore '325 includes no such means. Instead, as discussed at length above, Pecore '325 includes a switching circuit that is simply utilized to short the output terminals of the power supply together to reduce the power consumption to near zero. Pecore does not describe or illustrate that such switching circuit has the ability to shift the AC input 180 degrees whatsoever. Instead, the switching circuit is merely utilized to short the output to reduce the output voltage to about 0.1 volts. As such the applicant respectfully submits that independent claim 15 is not anticipated by Pecore '325. Reconsideration of this claim and indication of its allowability at an early are respectfully solicited.

Independent claim 22 requires, *inter alia*, "means for inverting connected to said second means for voltage regulation." As discussed above, Pecore '325 does not include any such means for inverting. Instead, the section of Pecore '325 to which the Examiner directs the applicant's attention for such a disclosure merely describes the use of the switching circuit

to short the output of a stage of the DC supply to reduce the power consumption to near zero. Such a switching circuit does not perform any inverting function, but merely reduces the output voltage from + 24 VDC to + 0.1 VDC. As such, the applicant respectfully submits that Pecore '325 cannot anticipate independent claim 22. Reconsideration of this ground of rejection and indication of the allowability of this independent claim are therefore respectfully solicited.

Independent claim 23 as amended, requires, *inter alia*, the step of converting the AC input during a second half-cycle to a second DC output with the same polarity as the first DC output by inverting the second DC output. As discussed at length above, the system of Pecore '325 does not convert the AC input to a second DC output with the same polarity as the first DC output by inverting the second DC output. Indeed, as discussed at length above, no inverting of DC output takes place whatsoever. Instead, the circuit to which the Examiner points for performing the inverting function actually only performs a switching function to switch off the output of the power supply. Specifically, the transistor is coupled between the two output terminals such that it shorts them together when turned on to reduce the output voltage from its normal + 24 VDC to + .01 VDC. As such, the applicant respectfully submits that Pecore '325 cannot anticipate claim 23 and those claims dependent thereon, to wit claims 24 and 25. Reconsideration of this ground of rejection and indication of allowability of claims 23-25 are therefore respectfully solicited.

The Examiner has rejected claim 12 under 35 U.S.C. §103(a) as being obvious over Pecore '325 and Tanoi (U.S. Patent No. 5, 498, 991). The applicant has thoroughly studied each of these references, the Examiner's rationale for combining same, and the language of claim 12. In view of this analysis, the applicant must respectfully traverse this ground of objection. Reconsideration of this ground of objection and indication of the allowability of claim 12 at an early date are respectfully solicited.

It is axiomatic that the references, when combined, must teach each and every limitation of the claims against which they are applied. However, as discussed at length above, Pecore '325 does not teach or suggest the inclusion of an inverter as required by

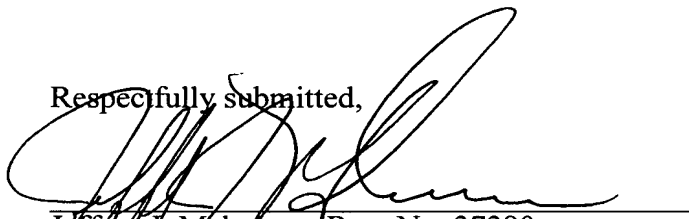
independent claim 1 from which claim 12 depends. Tanoi '991 fails to account for this deficiency of Pecore '325. As such, these references when combined fail to teach each and every limitation of claim 12 and therefore cannot render this claim obvious in view thereof. Reconsideration of this ground of rejection and indication of the allowability thereof are respectfully solicited.

The applicant also respectfully traverses this ground of rejection because there is no suggestion or motivation to support this proposed combination. The Examiner has indicated that the suggestion or motivation to include the level shifter circuit of Tanoi '991 in the circuit of Pecore '325 is to "reduce the risk of the microprocessor being damaged by extremely high voltage signals and not being able to interpret extremely low voltage signals." However, the system of Pecore '325 does not have any extremely high voltage signals or extremely low voltage signals from which the microprocessor must be protected. Instead, the system of Pecore '325 utilizes a standard input line voltage to generate an output 24 volt DC signal and an output 5 volt DC signal. The system of Pecore '325 is also a closed system for use in a refrigeration appliance. As such, there is no reason to believe that the controller would ever be subjected to extremely high voltage signals and extremely low voltage signals as suggested by the Examiner. Therefore the applicant respectfully submits that there is no suggestion or motivation to support this proposed combination. Reconsideration of this ground of rejection for this additional reason and indication of the allowability of claim 12 at an early date are respectfully solicited.

In re Appln. Of: Gregory J. Momber
Application No.: 09/913,859

If the Examiner believes that a telephonic conversation will aid in the resolution of any issues not resolved herein, the Examiner is invited to contact the applicant's attorney at the telephone number listed below.

Respectfully submitted,

A handwritten signature in black ink, appearing to read 'Jeffrey J. Makeever', is written over a horizontal line.

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Date: November 9, 2004

In re Appln. Of: Gregory J. Momber
Application No.: 09/913,859

AMENDMENTS TO THE DRAWINGS

The attached sheets include changes to Figs. 2, 4, 5a, 5b, 5c, and 5d.

The drawings have been amended to add the reference characters noted by the Examiner, and to provide proper sizing of the numbers under 37 CFR 1.84(p).

A complete set of formal drawings to replace those originally filed are marked "Replacement Sheet" and included herewith.

Attachment: Replacement Sheet(s)
Annotated Sheet(s) Showing Changes
New Sheet(s)



FIG. 2

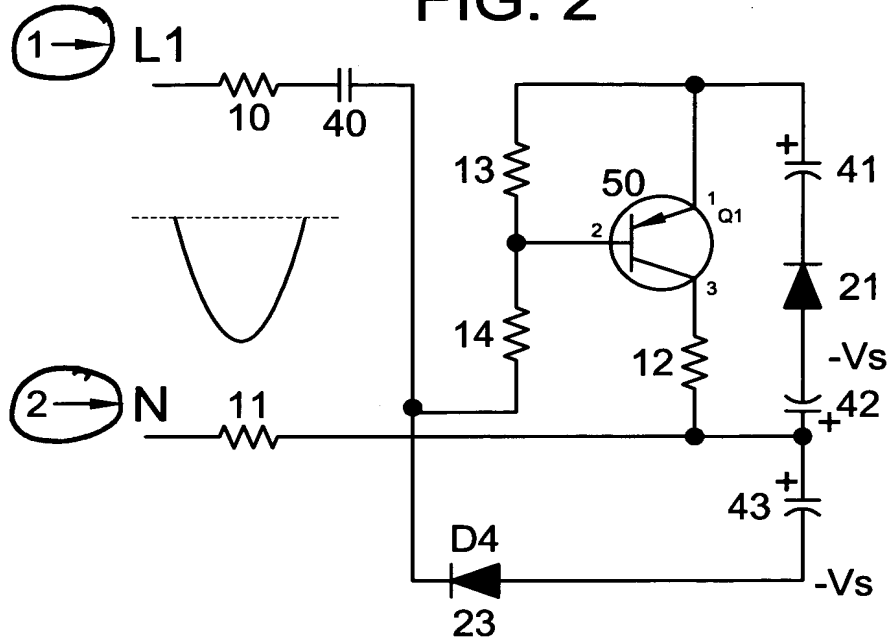


FIG. 4

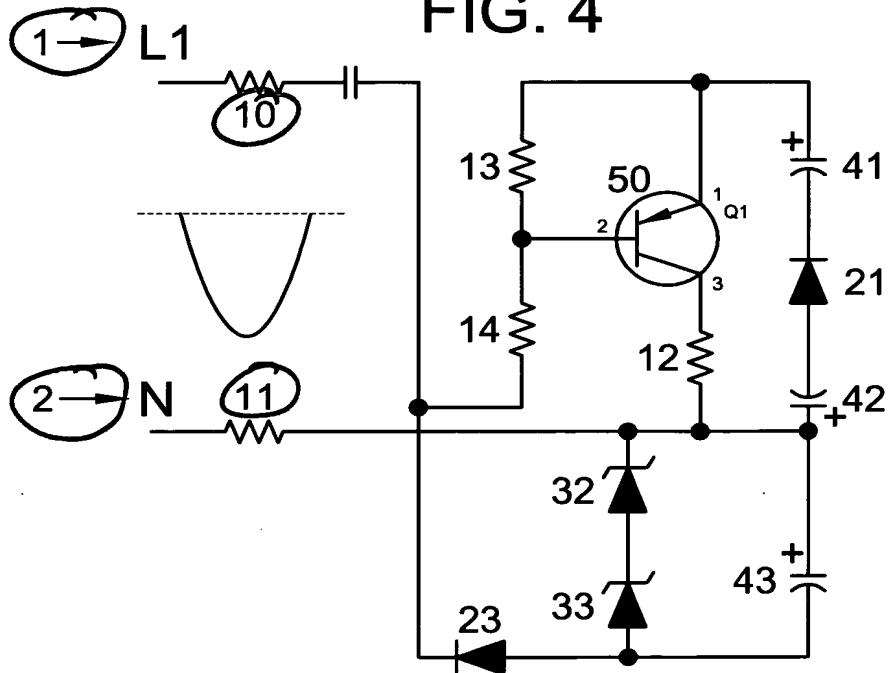


FIG. 5a

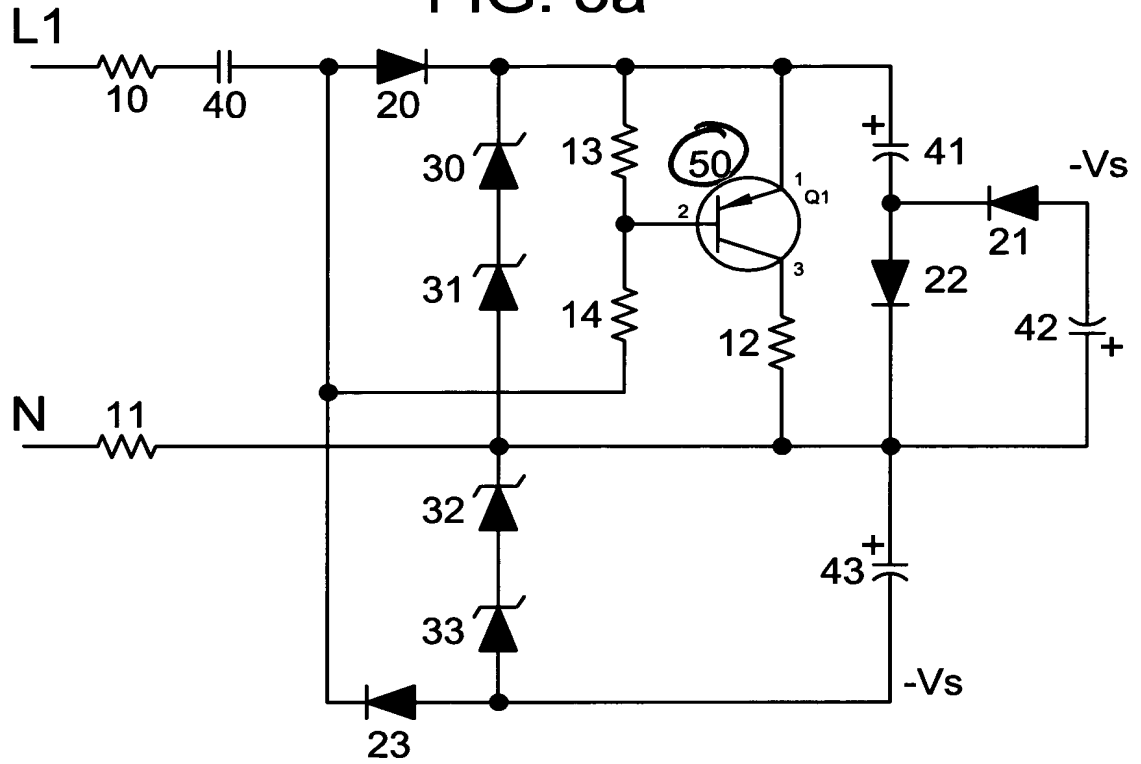


FIG. 5b

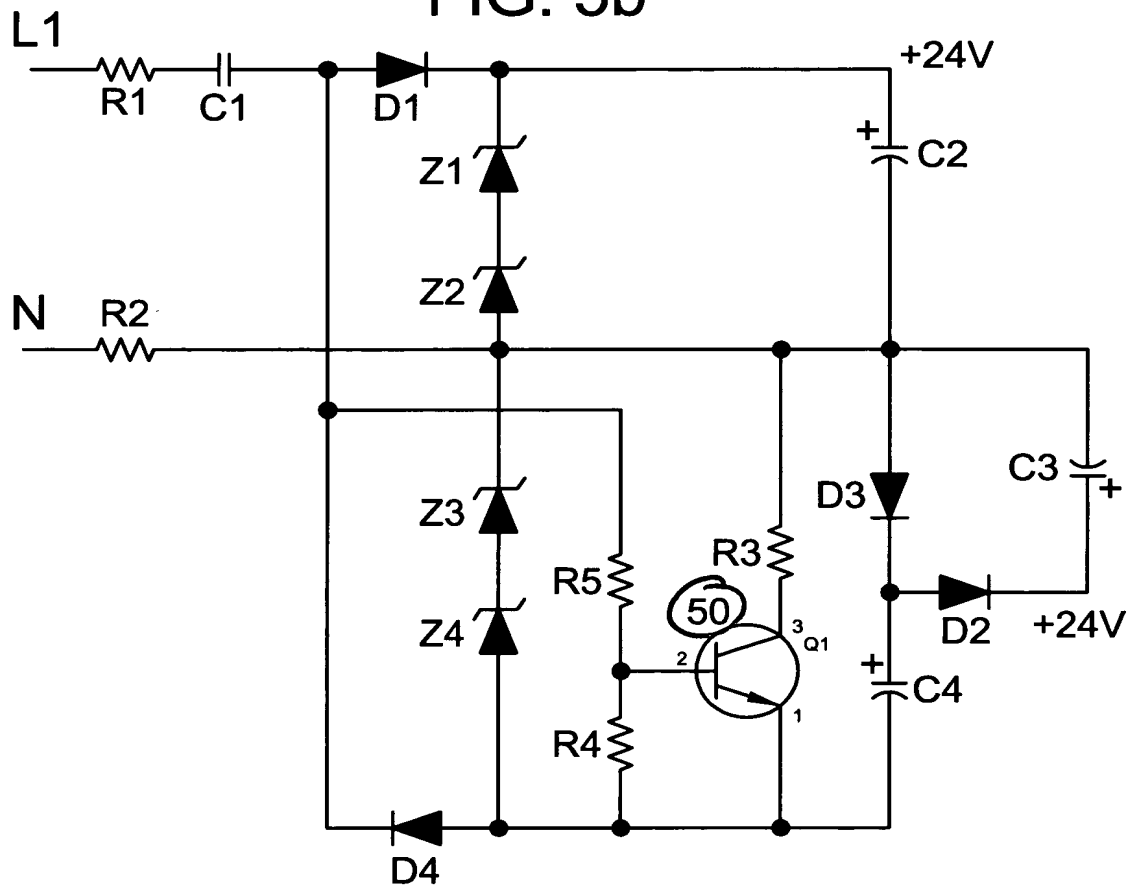


FIG. 5C

The circuit diagram shows a power supply system. It features a transformer with a primary winding L1 and a secondary winding N. The secondary winding N is connected to a network of resistors R1, R2, R4, and R5, and capacitors C1, C2, C3, and C4. The circuit also includes diodes D1, D2, D3, and D4. A 50V source is connected to the secondary winding Z1. The output is regulated to -24V.

FIG. 5d

